

REMARKS

Reconsideration of this application, as amended, is requested.

Claims 1-6, 8, 10-16, 18 and 20 remain in the application. No claims have been amended. However, a minor amendment to the specification has been entered to correct a typographical mistake in the original application.

A review of the prosecution to date may be helpful for addressing issues raised in the final rejection. In particular, the June 20, 2005 office action rejected original claims 1-4, 6-14 and 16-20 under 35 USC 103(a) as being obvious over Takahashi considered in view of Heimann. Claims 1, 2, 4-12 and 14-20 were rejected under 35 USC 103(a) as being obvious over Takahashi considered in view of Heimann et al. The Examiner asserted in that office action that Takahashi shows a pulsation dampening apparatus with a housing that has a dampening chamber and a dampening assembly accommodated in the housing. The Examiner explained that the dampening assembly of Takahashi has a working unit 24, 27 and a retainer 29. The Examiner openly acknowledged that Takahashi has no elastic retainer acting in conjunction with a force conversion mechanism. As a result, the Examiner turned to the secondary references in an effort to address the acknowledged deficiencies of Takahashi.

The response to the first office action explained that the Takahashi reference is assigned to the assignee of the subject invention and is the admitted prior art of FIG. 3. The response proceeded to explain that the disc 155 of the admitted prior art (Takahashi) is held in a fixed position in the body 152 by caulking over the bottom end of the body 152 to define a flange 156. Hence the body 152 must be formed from a material that is

deformable for caulking. The deformable material may not be ideal for the entire housing. As a result, the admitted prior art device (Takahashi) is made of two parts.

The previous Amendment emphasized the "force conversion mechanism which converts a spring back force of the elastic retainer in said pre-loaded state to urge the circular fulcrum of the working unit elastically against the vibration dampening member and towards the dampening chamber." The claimed "force conversion mechanism" enables the fulcrum to be supported elastically in the housing for movement towards and away from the dampening member, but biased towards the dampening chamber. Accordingly, the previously claimed invention uses the elastically supported fulcrum to permit some axial movement of the fulcrum and to thereby avoid excessive deformation of the vibration dampening member. Counsel asserted in the remarks of the last Amendment that none of the prior art taught or suggested an elastically supported fulcrum.

The Examiner appears to have concluded that the Amendment addressed the rejection raised in the first office action. As a result, the final rejection of October 19, 2005 has raised new rejections. In particular, the Takahashi reference is no longer relied upon as the primary reference. Rather, claims 1-5 and 8 were finally rejected under 35 USC 103(a) as being unpatentable over JP 8-320031 to Kazuhisa considered in view of Heimann. Kazuhisa also is assigned to the assignee of this invention. The Examiner asserted that Kazuhisa discloses a pulsation dampening apparatus with a housing that has a dampening chamber 4 and a dampening assembly. The dampening assembly was considered to include a working unit having a dampening member 5 and a circular fulcrum 7 at an outer periphery of the dampening member. The Examiner concluded that the circular fulcrum of Kazuhisa is more relevant than the coil-shaped structure of Takahashi.

However, the Examiner still had to rely upon the C-shaped retaining ring and the cam surface of Heimann. The rejection asserts that the skilled artisan would be motivated to combine the C-shaped ring and cam surface of Heimann into the Kazuhisa pulsation dampening apparatus.

A rejection under 35 USC 103 is not necessarily appropriate merely because a claim recites elements that can be found in two distinct references. Rather, there must be something in the prior art that would motivate the skilled artisan to make the combination. The relevant teaching of Kazuhisa is very similar to the admitted prior art of FIG. 3 and Takahashi. In particular, the fulcrum in both the previously cited Takahashi reference and the currently cited Kazuhisa reference is held fixedly in place by caulking over the lower edge of the body. Pulsations in the pressure chamber of Takahashi and in the pressure chamber of Kazuhisa are dampened by flexure of the disc 154 of the admitted prior art or the plate-like member 5 of Kazuhisa. This deformation is generated about the fulcrum that is crimped securely into the housing by caulking over the open edge of the housing. As a result, the entire pulsation dampening effect of Kazuhisa is achieved by the deflection of the plate-like member 5 about the fixed fulcrum 2a. Takahashi actually was invented by the assignee after Kazuhisa and shows improvements to the currently cited Kazuhisa reference. In particular, the Takahashi reference forms the housing from two parts, namely one part that is well suited for caulking and another part that is not well suited for caulking. Additionally, Takahashi employs a coil-shaped fulcrum to provide support at an interior position of the disc. A key feature of the Kazuhisa reference is the cover 9 made of an elastic material and configured to cover both the plate-like member 5 and the caulked over projection 2a. The cover 9 creates an air chamber 8 between the

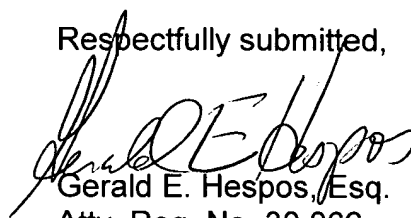
cover 9 and the plate-like member 8. This combination of the plate-like member 5, the elastic cover member 9 and the air chamber 8 therebetween is considered by Kazuhisa to contribute to enhanced dampening even when pressure inside the hydraulic pressure chamber 4 varies. As a result, the Kazuhisa reference requires the air chamber 8 between the plate-like member 5 and the cover member 9 to be well defined for contributing appropriately to the dampening effect. There is no suggestion in Kazuhisa of having a fulcrum 7 that can move axially, and such a movement would result in changing the volume of the air chamber 8. Thus, this hypothetical feature incorporated into Kazuhisa would completely alter the mechanics of the Kazuhisa device and would change the dampening affect of the air chamber 8.

The rejection would require the person skilled in the art of pulsation dampening devices to turn to an entirely different art area relating to structures for holding a gear on a drive shaft or in a bore. The combination then would require the skilled artisan to completely ignore the teaching of Takahashi and Kazuhisa pertaining to the precise mechanical affixation of a fulcrum and a plate-like member in a pulsation dampening device. Why would the skilled artisan ignore that teaching? It is submitted that the Examiner must appreciate the state-of-the-art existing at the time the invention was made and the problems recognized by the skilled artisan. The state of the relevant art at the time the invention was made was the secure mechanical affixation of the fulcrum and the dampening member. The problems faced by those skilled in the art related to the selection of appropriate materials for caulking the housing into a secure mechanical affixation with the fulcrum and/or the assembly of a multi-part housing (Takahashi) to ensure that each part of the pulsation dampening device was formed from a material that would meet the

physical demands of that part of the device. Counsel can think of no reason why a skilled artisan wrestling with those problems would turn to the Heimann assembly for securing a gear to a rotatable shaft of bore. Heimann has no fulcrum about which any member deflects. Counsel respectfully reiterates the arguments asserted in the last office action. In particular, there is no prior art where a fulcrum is supported elastically, and certainly no prior art where an annular fulcrum is supported elastically. For these reasons, it is submitted that the previously amended claims 1-5 and 8 are not rendered obvious by the hypothetical combination of Kazuhisa and Heimann. The Takahashi reference described above and in the previous Amendment does not overcome the deficiencies of Kazuhisa and Heimann when applied to previously amended claims 6, 10-16, 18 and 20.

In view of the preceding amendment and remarks, it is submitted that the claims remaining in the application are directed to patentable subject matter, and allowance is solicited. The Examiner is urged to contact applicant's attorney at the number below if the Examiner believes a telephone or personal interview would facilitate the prosecution of this application.

Respectfully submitted,



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